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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,418	02/13/2006	Harumatsu Miura	T-1428	8527
802	7590	11/12/2008	EXAMINER	
PATENTTM.US			MAI, NGOCLAN THI	
P. O. BOX 82788				
PORTLAND, OR 97282-0788				
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			1793	
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			11/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,418	Applicant(s) MIURA ET AL.	
	Examiner NGOCLAN T. MAI	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 2-5 and 20-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 8-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/4/07, 2/13/06, 0/1/05, 6/16/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Currently claims 1-50 are in the application.
2. Applicant's election with traverse of group I, species a in the reply filed on 7/29/08 is acknowledged. The traversal is on the ground(s) that the search and examination would be similar that the claims should be examined together. This is not found persuasive because there may be some overlap in the searches of the inventions, but there is no reason to believe that the searches would be identical. Furthermore, the examination of the process claims is based on different criteria from that of the material or device claims, hence the examination of the groups is not co-extensive. Therefore, based on the additional work involved in searching and examination of the multiple distinct inventions together that would present serious burden to the examiner, restriction of distinct invention is clearly proper.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 2-5 and 20-50 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/29/08.

Claim Objections

4. Claim 8-19 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 8-19 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 6, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The addition of the word “type” to an otherwise definite expression extends the scope of the expression so as to render it indefinite. *Ex parte Copenhagen*, 109 USPQ 118 (Bd. App. 1955).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al. “Composition Dependence of Microstructure of Mechanically Alloyed Powders and Their Compacts of High Nitrogen Cr-Mn Steels.” in view of Flinn et al. (Pat 5,908,486).

Concerning claims 1 and 6, Miura et al discloses high nitrogen containing austenite steel bulk material comprising an aggregate of individual particles composed of grains of several tens of nanometers (i.e., nano-crystal grains), wherein a metal nitride exists as a crystal grain growth

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inhibitor in the bulk material. Miura teaches that during manufacturing iron nitride powder as a nitrogen source is mechanically alloyed with elemental metals and that 0.89% mass of nitrogen is retained in the hot compacted samples. See col. page 907, last paragraph of column 1 and page 909, column 2. The retained nitrogen reads on the claimed solid-solution type nitrogen and its amount in the austenite nanocrystalline grains.

Miura et al differ from the claims in that Miura does not teach metal oxide or semimetal oxide exists as a crystal grain growth inhibitor.

Flinn et al disclose an austenitic stainless steel strengthened by combination of (a) intragranular precipitation of carbide and nitride nucleated on the nanometer-size hollow oxide resident within the alloy grains, (b) nitrogen solid solution strengthening, and (c) grain boundary pinning by solid oxides comprising aluminum oxides, precipitated along the grain boundaries. See col. 2, lines 15-37, col. 7, line 58 to col. 8, line 5 and claim 13. Flinn et al also teach the solid oxide dispersions are believed to be responsible for pinning the grain boundaries and hence restricting grain growth. See col. 8, lines 43-48.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the high nitrogen containing austenite steel bulk material of Miura et al by further including metal oxide as taught by Flinn et al in order to control the grain size of the austenite steel bulk material of Miura thereby providing bulk material having enhanced strength.

Concerning claims 7, Miura teaches the claimed limitation since Miura only mentions some ferrite phase in the matrix at page 909, column 2, 2nd paragraph, which implies that ferrite nano-crystal grains are not the majority.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGOCLAN T. MAI whose telephone number is (571)272-1246. The examiner can normally be reached on 8:30-5:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit
1793

n.m.